



# Green Schools News

*EmPOWERing Maine Students to Know Their SOURCE*



Volume 3, Issue 1

Fall 2002



Gov. King and Sen. Mitchell pose with members of St. Albans' Energy Patrol.

## Governor King Visits a Maine Green School!

St. Albans Consolidated—one of 17 schools participating in the Maine Green Schools project—was visited by Governor King on April 26th, 2002. The occasion? In honor of Earth Day and Earth Week, the Governor wanted to celebrate various improvements the Maine DEP has contributed to the environment over the past decade. Schools participating in the Maine Green Schools project (an effort run by MEEP with assistance from the Maine DEP) help the environment by learning how to conserve energy. Conserving energy means that utility companies don't need to burn as many fossil fuels to provide electricity, which, in

turn, means less pollution in our air (and more money for school programs!).

The Maine Green Schools project places the students at the heart of the quest for energy conservation by putting them in charge of monitoring energy use in their schools. Working in groups of 4 or 5, students don their Energy Patrol T-shirts and travel to neighboring classrooms, administering "thanks" stickers to classrooms that conserve energy and "oops" stickers to classrooms that forget. At the end of each week, care of the polar bear puppet mascot is awarded to the classroom

(Gov. Visits Green School...cont'd on p. 6)



A "thanks" sticker

**Green Schools News is a publication of:**

- ☺ Maine Energy Education Program (MEEP)
- ☺ Maine Department of Environmental Protection, Air Bureau (MDEP)

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**What Can The Green Schools Program Do For You?**

- ☺ Encourage Interdisciplinary Learning and Environmental Awareness;
- ☺ Foster better communication between students, teachers, custodians, and administrators;
- ☺ Help your school save electricity, which results in more money for books and supplies for your classroom.

**Inside this issue:**

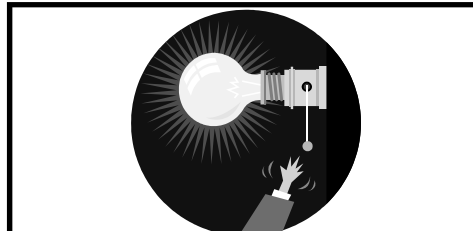
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## MEEP and the Public Utilities Commission: Working Together to Create an Energy-Literate Citizenry

In June the Maine Public Utilities Commission (PUC) awarded \$50,000 to MEEP for the upcoming school year! This money—a mere fraction of the total earmarked by the Conservation Program Fund—was provided to assist school-based energy conservation programs in Maine. The funds for this program are derived from a systems benefit charge levied on all electric utility payers. The Commission was impressed with the amount of oral and written support it received on behalf of MEEP (six people participated in the public hearing, and over 25 letters were written by individuals who felt our program was worthwhile). Many thanks to all of you who took the time to help us promote our program!

Since the Commission believes that school-based education is an important element in producing an energy

literate citizenry in Maine, it has put together a task force to assess the most effective means of educating Maine's school children about energy production and uses of energy. Their findings—expected sometime this win-



This school year MEEP will be focusing on the amount of money saved by each school that has established an Energy Patrol.

ter or spring—will determine whether MEEP will continue to receive monetary support through the Conservation Program Fund. Other educational programs that will be assessed by the task force include one developed by the

University of Maine's College of Education and Human Development and one developed by Maine Public Service (MPS).

One of the caveats associated with this award money is that we must be able to document the effectiveness of our energy education program. As a result, we will be working hard this year to determine precisely how much money has been saved by schools that have established Energy Patrols or have participated in the compact fluorescent light bulb fundraising effort. We hope this information will be useful to you as well, helping to motivate your school to continue to make energy conservation an important intracurricular element of your students' education.

## Maine Junior Solar Sprint Championship—A Glaring Success!

Sunny skies and comfortable temperatures beckoned students, teachers, and parents from all over the state to the Owls Head Transportation Museum on Saturday, June 1st, 2002. There, dizzying arrays of solar powered cars and boats of all shapes, colors, and designs were raced and then reviewed by a panel of student and adult judges for technical merit, craftsmanship, and innovation.

Here are the day's results:



### BOATS

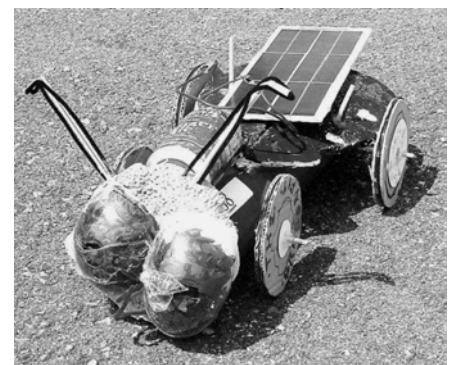
#### *Speed*

- |     |  |
|-----|--|
| 1st | "White Lightning"<br>Alex Dereszynski<br>Strong Elementary School    |
| 2nd | "Firebird"<br>Travis Pinette<br>Eva Hoyt Zippel School               |
| 3rd | "Devils"<br>Evan Gagnon, Shena Collins,<br>Chelsea Elementary School |



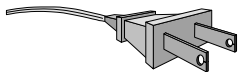
#### *Kids' Choice*

- |     |  |
|-----|--|
| 1st | "Firebird"<br>Travis Pinette<br>Eva Hoyt Zippel School |
|-----|--|



- |     |  |
|-----|--|
| 2nd | "Black Panthers"<br>Wade Cooper, Ryan Allen,<br>Mike Wilson<br>Chelsea Elementary School |
| 3rd | "A.J.D. All American"<br>Aaron Dereszynski<br>Strong Elementary School                   |

*(Jr. Solar Sprint Results...continued on p. 4)*



## Are You Energy Savvy? (A Student Activity)



We are fortunate in this country to have access to a seemingly never-ending supply of electricity, be it derived from coal, petroleum, nuclear, hydropower, or natural gas. And unless we are responsible for paying the electric bill, we don't think twice about consuming it. But energy conservation should be an important element of our everyday lives, not only because it'll help save us money, but also because it means that fewer fossil fuels will be burned, thus helping to conserve resources and improve outdoor air quality.

In this activity, students will learn how to read a residential electric bill. By the end of the exercise, they should gain a better understanding of the costs and units of measurement associated with electricity consumption, and, as a result, become more energy savvy. This exercise is adapted from an activity in the NEED Project's "Saving Energy at School—Learning and Conserving" booklet; it has been printed here with permission.

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*Materials Needed (per student):* A copy of a recent utility bill, a calculator, a pencil

*Suggested Grade Level:* 7-12

*Instructions:*

Step 1: (Group activity) Identify the major components of your electric bill.



Maine residents have essentially three sections on their electric bills:

- An account summary, which outlines the total charges incurred during the billing period;
- A delivery service summary, which outlines charges affiliated with electricity delivery to your home,
- A delivery supply summary, which describes charges affiliated with the production of electricity for your home.

Your bill is separated into these three factions because on March 1, 2000 the State of Maine enacted a law that forbids electricity producers from also being electricity suppliers. As a result, customers receive billing information from both the provider and the supplier on their electric bills. Customers need only to pay one bill, however; the supplier will forward the appropriate portion of their electric bill to the electricity provider.

Take a moment to identify each of these sections on the copy of the electric bill before you. Note that in at least two sections you are given information about your prior account balance, forwarding balances, and new charges. Also note that you are given information about last month's electricity use and your electricity use 12 months prior to the billing date (CMP and MPS customers receive information for the entire previous 12 months).

Step 2: (Individual exercise) Identify the following features on you electric bill; in which of the three sections can each of these features be found?

account number	account balance	meter number	meter readings	service location
electricity provider	electricity producer	bill due date	customer name	current charges
meter read dates	balance forward	messages	prior balance	energy consumed

Step 3: (Individual exercise) Answer the following questions:

- What number should you call to report an outage?
- What is the price of electricity per kilowatt-hour?
- How much would your electric bill be if you paid after the due date?
- To whom should the payment be made out to?
- If you had an issue with your bill, what number would you call?



*FEEL FREE TO PHOTOCOPY THIS PAGE FOR YOUR STUDENTS!*

CARS		Technical Merit	
<i>(Jr. Solar Sprint Results...continued from p. 2)</i>			
<i>Kids' Choice</i>			
1st	"Banana Split" Kaitlyn Oddy, Anna Whiston, Kristin Fitzpatrick Middle School of the Kennebunks	1st	"Blue Thunder" Alex Dereszynski, Aaron Dereszynski Strong Elementary School
2nd (tie)	"Scooby Doo Mobile" Tom Merrow, Alex Morse, Kyle Raynor Middle School of the Kennebunks "The Fireball" Erin Augulewicz, Brooke Hockney, Lauren Wallape Marshwood Middle School	2nd	"Crusher" Matt Brodeur, Steven Cyr Auburn Middle School
3rd	"Freedom USA" Corey Harding, Tiffany Carter Corinna Junior High School	3rd (tie)	"#7" Shufen Li James F. Doughty School "We BU" Jacob Chouinard, Kirsty Strong, Victoria Tanous Auburn Middle School
		<i>Craftsmanship</i>	
1st	"UC Nothing" Levi Cote, Brad Jamison, Brian Wood James F. Doughty School	1st	"Blue Thunder" Alex Dereszynski, Aaron Dereszynski Strong Elementary School
2nd	"Silver Streak" Emily Mitchell, Emma Church, Melissa Chenard, Courtenay Kinney Middle School of the Kennebunks	2nd	"P.O.S." James Collins, Josh Nason Middle School of the Kennebunks
3rd	"Blue Thunder" Alex Dereszynski, Aaron Dereszynski Strong Elementary School	3rd	"Love Bug" Cara Evans, Marissa Rezack, Rhiannon Hughey, Kayleigh McCullom Marshwood Middle School
<i>Innovation</i>		<i>Speed</i>	
1st	"Yankee Doodle's Dandy" Julia Gmeiner, Alex LeBlanc Middle School of the Kennebunks	Alex Dereszynski, Aaron Dereszynski Strong Elementary School	
2nd	"Blue Thunder"	3rd	"Diablo II" Josh Rich, Jon Welch, Adam Collomy Middle School of the Kennebunks

## Thank You!



MEEP sends a hearty "thanks" to the following people and organizations who helped make this year's Maine Junior Solar Sprint a rousing success:

- **Maine DOT** (for sponsoring the Maine Junior Solar Sprint program)
- **Owls Head Transportation Museum** (for generously providing the facilities for the state championship)
- **Volunteers** (for selflessly providing their time and skills during the racing season)

## Congratulations!

Kudos to our Maine Junior Solar Sprint teams who competed and placed in the Northeastern Junior Solar Sprint Championship in Massachusetts! MEEP is proud to recognize the following teams:

- "Yankee's Doodle Dandy", **Julia Gmeiner** and **Alex LeBlanc**, Middle School of the Kennebunks, 1st place in Speed
- "We BU", **Jacob Chouinard**, **Kirsty Strong**, and **Victoria Tanous**, Auburn Middle School, 2nd place in Technical Merit

## "Watts" on the Web?

*Energy curricula you can download from the internet!*

- <http://www.wattsnew.com/learn3/teachlounge.html>

This website was designed for children and teachers in grades K-6. A cooperative effort of the U.S. EPA, Earth Share, and the Ad Council, it provides activities that stress responsible energy use and educates students about energy-related air pollution.



- <http://www.bpa.gov/Corporate/KR/ed/6-curricula.htm>

The Bonneville Power Administration is a federal agency that provides power to residents in the Pacific North west. It provides activities for students in grades K- 12 that deal with energy use and energy conservation.

- <http://www.need.org/guides.htm>

The NEED Project (National Energy Education Development) provides a number of educational resources for both teachers and students in the generalized subject of energy education. One great feature is that they also provide documents that correlate NEED's activities to state and national learning standards. This website also has links to its Energy Exchange Newsletter, a great reference tool for teachers!

## UPCOMING EVENTS!!

*Don't miss out on these exciting activities! Mark your calendars today!*

### MEEP REGIONAL FALL WORKSHOPS

**Wednesday, 16 October 2002**

Bethel Inn and Country Club, Bethel

**Tuesday, 22 October 2002**

South Berwick Town Hall, South Berwick

**Friday, 25 October 2002**

Penobscot Job Corps Center, Bangor

**Tuesday, 29 October 2002**

Cohen Center, Augusta (I)

**Friday, 1 November 2002**

Cohen Center, Augusta (II)

**Tuesday, 5 November 2002**

The Atrium, Brunswick

### TRANSPORTATION AND THE ENVIRONMENT WORKSHOPS

**Thursday, 7 November 2002**

Maine Audubon, Falmouth

**Tuesday, 19 November 2002**

Owls Head Transportation Museum

### ELECTRATHON INTRODUCTORY WORKSHOP

**Saturday, 19 October 2002**

MOFGA Fairgrounds, Unity

## Electrathon Maine: Not Your Average High School Class Project

Electrathon vehicles look a lot like fancy go-karts—with batteries. An Electrathon race, whether on an oval or road course, lasts one hour. The challenge is to use as much of the batteries' energy as possible—but not before the final flag drops!

The sport had its beginnings in England in the '80's, then migrated to the US by way of Australia. Initial advocates were middle-aged racing buffs, but high schools in diverse sections of the country have embraced the program because of its emphasis on real world science. Students design and build these cars, then race them to test the efficacy of their labors.

Electrathon was introduced to Maine in 1994. MEEP has coordinated Electrathon since 1996 with a goal of educating participants about larger transportation issues, such as alternative fuels and air quality. Introductory workshops are generally offered for new schools in the fall, while Maine Maritime Academy has hosted a mid-winter overnight tech workshop for Electrathon teachers and students since 2000.

On May 4, nine Electrathon vehicles gathered at Scarborough's Beech Ridge Motor Speedway for two races, a morning oval contest and an after-

*(Electrathon Maine...continued on p. 6)*



Herb Benecke helps Wayne Clarke, Cony High School student and MEEP board member, test drive an Electrathon vehicle.



(Electrathon Maine...continued from p. 5)

noon road course event. Mt. Blue High School's entry, driven by Mike Bowden, took the high school category with a combined total of 184 laps. Team Electrolite, with Fred Writt and Michael Lewis sharing driving duties (remember those middle-aged racing buffs?), took the open class with a combined 150 laps. Team Electrolite set a single race Electrathon track record of 113 laps (39.95 miles). For complete race results, please visit the MEEP website at <http://www.mEEPnews.org>.

Electrathon Maine is funded by the Maine Department of Transportation. For more information about the program, please contact Peter Zack at 625-7833.

(Gov. Visits Green School...continued from p. 1)

with the best energy conservation habits. The polar bear puppet symbolizes the potential plight of our planet as we continue to burn fossil fuels without regard for their effect on our world climate. At present, polar bears are having a difficult time surviving because the ice platforms they depend on to raise their young and to hunt are melting as a result of global climate change.

Last year MEEP launched 11 Energy Patrols—its greatest number ever! Call now to join the growing number of schools that are committed to making energy conservation an active part of their curricula! Please call Peter Zack at 625-7833 for more information.

Energy Patrol goodies! Clockwise from top: Energy Patrol T-shirt, polar bear puppet, light switchplate sticker, "thanks" and "oops" stickers, and hand-powered flash-light. These items are given to all schools that launch Energy Patrols.



## "Climate Change Backpack" Available on FREE Loan!

Middle and high school teachers wishing to introduce the topic of climate change to their student have access to a new tool—the Climate Change Backpack. Produced by Cumulus Interactive for the New England Science Center Collaborative, its contents summarize the main points of scientific understanding and agreement, then present that information in the form of simple exercises.

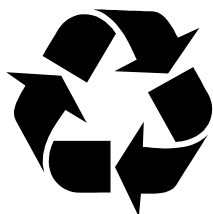
One of the Backpack's take-away messages is that there are many things we can do to reduce the amount of carbon dioxide in the atmosphere. Or, in the words of University of Wisconsin climate change scientist Jonathon Foley (not Baumeister Beaver—see cartoon below), "It's about putting your emissions where your mouth is." (YES! A Journal of Positive Futures, Winter 1999/2000).

The Maine Department of Environmental Protection's Bureau of Air Quality has purchased some Climate Change Backpacks; they are available to Maine teachers on a free loan basis. For more information, please contact Peter Zack at 625-7833.



## Healthy Schools Start with a Healthy Environment

### Schools Must Recycle Universal Wastes



Did you know there are some wastes that schools must recycle? This means that it is illegal to dispose of these wastes with your regular trash. Which wastes, you ask? Universal Wastes (UW) include:

- Cathode ray tubes (CRTs) in computer monitors and TVs
- Fluorescent, high intensity discharge, neon, high pressure sodium, metal halide and mercury vapor lamps
- Most batteries other than alkaline or car batteries
- Mercury thermometers
- Mercury thermostats
- Non-leaking PCB ballasts

Since early 2002 schools have been required to recycle mercury switches and relays and mercury medical and scientific instruments.

**Why?** Universal Wastes are hazardous wastes that have mercury, lead, other heavy metals and/or other toxics in them. These toxics can cause serious environmental and human health problems, especially mercury

which is toxic in very small quantities. One Maine school spent almost \$20,000 to clean up a mercury spill from a broken barometer and had to close the school for two days!

**How?** Soon many schools may be able to take their Universal Wastes to their local transfer station for recycling. Schools should check with their local town office or solid waste facility. If towns are not willing or are unable to accept school UW, then the school must call a licensed transporter. A list of transporters and recyclers can be found on the Department of Environmental Protection's (DEP) web page at <http://www.state.me.us/dep/rwm/uwmgtrecy.htm>.

**Questions?** More information about UW can be found in the DEP's Universal Waste Handbook dated August, 2001. Please call (207) 287-2651 to obtain a copy. You can also visit the DEP web site at <http://www.state.me.us/dep/rwm/hazardouswaste.htm> or call Ann Pistell at 287-7703 for more information or help in recycling.



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### Relationships: Schools and DEP



So what can DEP do for schools? Check out DEP's home page at [www.state.me.us/dep](http://www.state.me.us/dep) to find out about the programs and teacher resources offered by the Land and Water and Air Bureaus.

The DEP Bureau of Remediation and Waste management also offers assistance that is not described on the web site, including compliance with *asbestos* laws and *lead paint* issues.

The new UW (Universal Waste regulations) and heightened public concern about *mercury* have led us to create a new outreach initiative to schools. Bureau staff are available to visit schools to assist with compliance efforts or to help conduct a mercury audit. *Chemical management* is another area where bureau staff offers guidance as well as information on installation or removal of *fuel tanks*, *hazardous waste management* and *spill response*. DEP staff would much rather talk to schools before a problem arises, so please don't hesitate to call us at 287-7651 with questions or concerns on any of these issues.










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**Fall 2002 Issue**

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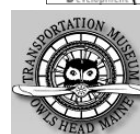
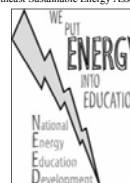
*Maine Energy Education Program - Energy Activities in an Ecological Context*  
Phone: 207.625.7833 Email: [meep@psouth.net](mailto:meep@psouth.net) Web: <http://www.meepnews.org>

## Look "Watts" Inside This Issue of Green Schools News!!

-  Governor King joins the St. Albans Energy Patrol—find out why!
-  How did your school do at the Maine Junior Solar Sprint Championship? See inside for details!
-  Learn how to read an electric bill!
-  Engage your students in energy and transportation education activities! Dates and locations for fall workshops are listed inside.
-  Discover how the Maine Department of Environmental Protection is helping Maine schools to have a healthier environment!

This issue of Green Schools News created by Heather Healey  
(AmeriCorps Volunteer, Maine DEP Bureau of Air Quality)

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